Claims 26 and 35 are amended to transpose preamble language into a limitation of the vessel of the claimed system. The amendment to claim 35 also adds a detector as an element of the system. Claim 31 is amended to overcome the objection.

Claims 26 and 29 to 35 were rejected under 35 U.S.C. §103(a) over Stylli et al. and Bagshawe et al.

The Office Action acknowledges that "[t]he Styllki et al. patent does not explicitly teach chemical combinatorial synthesis or the presence of airlocks at separate ingress and egress points of the incubator (vessel)."

The Office Action first argues that "[t]he Bagshawe et al. patent teaches an apparatus for carrying out assays in a continuous fashion (abstract and column 1, lines 5-13)." This may be correct, however Bagshawe et al. does not teach or suggest "a vessel for combinatorial chemical synthesis" (claims 26 and 29 to 35). Combinatorial chemical synthesis is a:

> Sequential high throughput screening (HTS) method[s] [that] can be conducted within the tubular reactor. For example, sequentially loaded combinations of reactants can be subjected to a varying parameter of reaction within a reaction zone of the reactor to provide continuously and incrementally varying product. The composition of each sequentially loaded combination can be controlled along with control of varying parameters of reaction within the reaction zone and sequentially produced products can be detected by a convention detecting means. The detected products can be correlated with the varying parameters of the reaction to provide a nonrandom combinatorial library of product.

Specification page 4,lines 1 to 10. Stylli et al. discloses a linear system that includes a linear incubator and Bagshawe et al. teaches an "analysis apparatus."

The Office Action also argues that "[w]ith respect to the presence of airlocks at the ingress and egress points of the incubation chamber, it would have been obvious to one of ordinary skill at the time that the invention was made to employ airlocks at the ingress and egress points to the incubator in circumstances where atmospheric control required atmospheric conditions such as high or low pressure, high or low temperature, or atmospheric gasses that are toxic or reactive with components of the normal atmosphere."

However, Styllki et al. and Bagshawe et al. do not teach or suggest ports comprising "air locks." The statement of obviousness to one skilled in the art is an improper "conclusionary" statement unsupported by "objective teaching[s] of the prior art" and unsupported by the "reasoned logic" required by *In re Lee*, 61 USPQ 2d 1430, 1434, 277 F.3d 1338, _____ (Fed. Cir. 2002). The teaching of "air lock" must be found in the references.

The PTO bears the burden of establishing a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993); In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). MPEP 2143 states that "[t]o establish a prima facie case of obviousness,... the prior art reference (or references when combined) must teach or suggest all the claim limitations." "A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art...." In re Rijckaert, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). Styllki et al. and Bagshawe et al. do not teach or suggest "a vessel for combinatorial chemical synthesis" and Styllki et al. and Bagshawe et al. do not teach or suggest "air-lock." "When the reference(s) cited by the examiner fail to establish a prima facie case of obviousness, the rejection is improper and will be overturned." In re Deuel, 34 USPQ2d 1210, 1214 (Fed. Cir. 1995). The references do not establish a prima facie of obviousness. The rejections under 35 U.S.C. 103 over Styllki et al. and Bagshawe et al. should be withdrawn.

In view of the foregoing amendments and remarks, it is respectfully submitted that claims 26 and 29 to 35 are allowable. Reconsideration and allowance are requested. The Office Action failed to address the limitations of dependent claims 29 to 34. In the event the present 35 U.S.C. §103(a) rejection is not withdrawn, the PTO is requested to address claims 29 to 34 in a non-final Office Action

Should the Examiner believe that any further action is necessary in order to place this application in condition for allowance, he is requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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Alexandria, Virginia
_____, 2002

CLEAN CLAIMS VERSION

26. A synthesis system, comprising a vessel for combinatorial chemical process having:

a charge port comprising an air lock capable of sequentially receiving a plurality of discrete combinations of reactants;

a reaction chamber in communication with said charge port, said reaction chamber being capable of receiving and enclosing the plurality of discrete combinations of reactants disposed linearly within said chamber; and

a discharge port comprising an air lock, distinct from said charge port, in communication with said reaction chamber to sequentially discharge reaction products of said combinations from said reaction chamber.

29. The system of claim 26, wherein said charge port and said discharge port each comprises an air lock controlled by a ball valve.

30. The system of claim 26, wherein said chamber is vertically longitudinal and is adapted to receive each of said combinations of reactants in a vial by sequential gravity loading from the charge port.

31 The system of claim 26, further comprising a detector proximate to said discharge port to detect said sequentially discharged reaction product from said reaction chamber.

33. The system of claim 26, further comprising a controller in communication with said reaction vessel to control a sequence of charging said combinations of reactants to said chamber or a sequence of discharging said products from said chamber.

34. The system of claim 26, further comprising a detector in communication with said discharge port to detect said sequentially discharged reaction products and a processor in communication with said controller and said detector to correlate reaction or reactant variables with a corresponding reaction product.

35. A [combinatorial chemical] synthesis system, comprising a vessel for combinatorial chemical synthesis having:

a charge port comprising an air lock controlled by a ball valve and capable of sequentially receiving a plurality of discrete combinations of reactants;

a reaction chamber in communication with said charge port, said reaction chamber being capable of receiving and enclosing the plurality of discrete combinations of reactants disposed linearly within said chamber;

a discharge port comprising an air lock controlled by a ball valve to sequentially discharge reaction products of said combinations from said reaction chamber;

a detector proximate to said discharge port to detect said sequentially discharged reaction product from said reaction chamber; and.

a controller in communication with said reaction vessel to control varying reaction parameters within said chamber.

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MARKED-UP CLAIMS VERSION

26 (twice amended). A [combinatorial chemical] synthesis system, comprising a vessel for combinatorial chemical process having:

a charge port comprising an air lock capable of sequentially receiving a plurality of discrete combinations of reactants;

a reaction chamber in communication with said charge port, said reaction chamber being capable of receiving and enclosing the plurality of discrete combinations of reactants disposed linearly within said chamber; and

a discharge port comprising an air lock, distinct from said charge port, in communication with said reaction chamber to sequentially discharge reaction products of said combinations from said reaction chamber.

29. The system of claim 26, wherein said charge port and said discharge port each comprises an air lock controlled by a ball valve.

30. The system of claim 26, wherein said chamber is vertically longitudinal and is adapted to receive each of said combinations of reactants in a vial by sequential gravity loading from the charge port.

31 (amended). The system of claim 26, further comprising a detector proximate to said discharge port to detect said sequentially discharged reaction product from said reaction chamber.

32. The system of claim 26, further comprising a controller in communication with said reaction vessel to control varying reaction parameters within said chamber.

33. The system of claim 26, further comprising a controller in communication with said reaction vessel to control a sequence of charging said combinations of reactants to said chamber or a sequence of discharging said products from said chamber.

34. The system of claim 26, further comprising a detector in communication with said discharge port to detect said sequentially discharged reaction products and a processor in communication with said controller and said detector to correlate reaction or reactant variables with a corresponding reaction product.

35 (amended). A [combinatorial chemical] synthesis system, comprising a vessel <u>for combinatorial chemical synthesis</u> having:

a charge port comprising an air lock controlled by a ball valve and capable of sequentially receiving a plurality of discrete combinations of reactants;

a reaction chamber in communication with said charge port, said reaction chamber being capable of receiving and enclosing the plurality of discrete combinations of reactants disposed linearly within said chamber;

a discharge port comprising an air lock controlled by a ball valve to sequentially discharge reaction products of said combinations from said reaction chamber;

<u>a detector proximate to said discharge port to detect said sequentially discharged reaction product from said reaction chamber</u>; and.

a controller in communication with said reaction vessel to control varying reaction parameters within said chamber.